OPINIONS AND DECLARATIONS RENDERED BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the Commission

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OPINION 266

Determination of the species to which the specific name *annulatum* Dschunkowsky & Luhs, [1906], as published in the combination *Piroplasma annulatum* (Class Sporozoa, Order Coccidiida) shall be held to apply

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OPINION 266

DETERMINATION OF THE SPECIES TO WHICH THE SPECIFIC NAME " ANNULATUM " DSCHUNKOWSKY & LUHS, [1906], AS PUBLISHED IN THE COMBINATION " PIROPLASMA ANNULATUM " (CLASS SPOROZOA, ORDER COCCIDIIDA) SHALL BE HELD TO APPLY

RULING :—(1) The name *Piroplasma annulatum* (Class Sporozoa, Order Coccidiida) was published in 1906 on page 290 of the *Report of the VIIIth International Veterinary Congress, Budapest*, 1905, where it appeared (**3 : 290**) in a paper by Dschunkowsky & Luhs communicated to the Congress by M. G. Tartarowsky, and is therefore to be attributed to Dschunkowsky & Luhs, [1906].

(2) Sergent (E.) was in error when in 1923 he rejected the specific name *annulatum* Dschunkowsky & Luhs, as published in the foregoing combination, on the ground that, when that name was first published, its authors had included under it two species (the one, pathogenic ; the other, non-pathogenic), for under the *Règles* a specific name may not be rejected on such grounds, it being necessary to determine the species to which the name should be held to apply by the use of the mechanism provided by Article 31.

(3) The first author to apply the provisions of Article 31 to the foregoing name was Witenberg in his paper published in 1947 in the *Bulletin of Zoological Nomenclature* (**1 : 233—234**), when he selected, as the species to which the name should apply, the pathogenic (as contrasted with the non-pathogenic) species included under the name *Piroplasma annulatum* by Dschunkowsky & Luhs, when establishing the nominal species so named.

(4) The nominal species *Theileria parva* Donatien, Plantureux *et al.*, 1923, and *Theileria dispar* Sergent (E.), 1924, considered by specialists to be identical with *Piroplasma annulatum* Dschunkowsky & Luhs, [1906], as determined under (3) above, and the specific names *parva* Donatien, Plantureux *et al.*, 1923, and *dispar* Sergent, 1924, as published in combination with the

generic name *Theileria*, are therefore junior subjective synonyms of *annulatum* Dschunkowsky & Luhs, [1906], as published in the combination *Piroplasma annulatum*.

(5) The specific name *annulatum* Dschunkowsky & Luhs, [1906], as published in the combination *Piroplasma annulatum*, is hereby placed on the *Official List of Specific Names in Zoology* as Name No. 82.

I.—THE STATEMENT OF THE CASE

On 7th April 1938 Dr. G. Witenberg (*Hebrew University, Jerusalem*) submitted to the International Commission on Zoological Nomenclature the following request for a ruling on the question of the taxonomic species to which the name *Piroplasma annulatum* Dschunkowsky & Luhs, 1904 [sic] (Class Sporozoa, Order Coccidiida) should, under the *Règles*, be held to apply :—

On the status of the name commonly cited as " Piroplasma annulatum " Dschunkowsky and Luhs, 1904 (Class Porozoa, Order Coccidiida)

By G. WITENBERG
(*Department of Parasitology, The Hebrew University, Jerusalem*)

Dschunkowsky and Luhs, 1904, *Zbl. Bakt.* (Erste Abt.) **35** : 486—492 ; in a paper entitled " Die Piroplasmosen der Rinder " described but did not name a disease of cattle in the Caucasus. In this article, reference is made to two " forms " of the parasite, one occurring in an " acute " form of the disease and the other in a " chronic " one. These authors later wrote of this species under the name *Piroplasma annulatum*, but it has not so far been possible to trace the paper in which this name was first so published.

Both the above " forms " of this parasite may now be distinguished as species, the one belonging to the genus *Theileria* Bettercourt, Franca, & Borges, 1907, *Arch. Inst. Bact. Camera Pestana* **1** : 343, the other to *Anaplasma* Theiler, 1910, *Bull. Soc. Path. exot.* **3** : 135. The *Theileria* species is apparently identical with a well-defined North African, namely *Theileria dispar* Ed. Sergent.

Ed. Sergent (1923, *Bull. Soc. Path. exot.* **16** : 23—30) expressed the view that the trivial name *annulatum* of Dschunkowsky and Luhs should not be recognised because the species so named by those authors

is a " mixed species ". Sergent considered that the species of *Theileria* described by the above authors under the above name might have been either of the two species of that genus found in the Mediterranean area, one pathogenic and the other non-pathogenic. The pathogenic species Sergent incorrectly called *Theileria parva*, though in his later papers he replaced that name by the name *Theileria dispar* ; the non-pathogenic species he called *Theileria mutans*.

However, the arguments advanced by Sergent cannot be accepted, for it is quite certain that there exists only one pathogenic species of the genus *Theileria* in the Mediterranean area. It seems, therefore, that the name *Theileria dispar* Sergent, should be regarded as a synonym of *Theileria annulata* (Dschunkowsky & Luhs, 1904) and not the contrary, as Sergent treats it in all his recent papers.

I should be much indebted for an *Opinion* on the question whether the rejection by Sergent of the trivial name *annulatum* Dschunkowsky & Luhs is in accordance with the provisions of the International Code of Zoological Nomenclature.

II.—THE SUBSEQUENT HISTORY OF THE CASE

2. The present application, which had been addressed by Dr. Witenberg to Dr. C. W. Stiles was forwarded on 6th June 1938 to Mr. Francis Hemming who in 1936 had succeeded Dr. Stiles in the Office of Secretary to the Commission. On receipt in London, these papers were given the Registered Number Z.N.(S.) 127. It had not been found possible to advance the consideration of the present application by the time that the outbreak of war in Europe in September 1939 led to the evacuation of the records of the International Commission from London to the country as a precaution against the risk of destruction through air raids. The Secretariat in London was re-opened in 1942, and steps were immediately taken to establish the *Bulletin of Zoological Nomenclature* as a means for bringing to the attention of zoologists applications submitted to the International Commission for decision. Work was at once started on outstanding applications with a view to arranging for their publication in the newly established *Bulletin*.

3. Immediately upon a start being made by Mr. Hemming in the routine checking of the details of this case, difficulties were

encountered, for it was found that in the paper by Dschunkowsky & Luhs published in 1904 (entitled *Die Piroplasmosen der Rinder*), which had always been treated as the place in which the name *Piroplasma annulatum* had been introduced into the literature, there was a full description of the newly detected organism but no scientific Latin name was applied to it. This led to a search of the literature which was both lengthy and arduous and in the end not wholly successful. In this difficult bibliographical investigation the Secretary to the Commission was greatly assisted by the late Dr. C. M. Wenyon, C.M.G., C.B.E., F.R.S. (*The Wellcome Foundation, London*) and by Mr. D. A. E. Cabot, M.R.C.V.S. (*Chief Veterinary Officer, United Kingdom Ministry of Agriculture & Fisheries, London*). The International Commission desires to express its thanks to these specialists for their assiduous efforts to further the investigation of the complex bibliographical problems involved in this case. The International Commission desires at the same time to thank (1) the Director of the Imperial Bureau of Animal Health for help given in this connection and, in particular, for supplying a photostat copy of the very rare paper by Dschunkowsky & Luhs published in 1903 which towards the close of the foregoing investigation it was thought might be the place where the name *Piroplasma annulatum* was first published, and (2) Miss I. M. Bellis, Personal Assistant to Dr. Wenyon, who undertook on his behalf a large part of the laborious search of the literature involved.

4. In October 1944 Mr. Hemming prepared a summary of the investigations into the question of the place of first publication of the name *Piroplasma annulatum* Dschunkowsky & Luhs carried out up to that date. This paper was prepared for publication in the *Bulletin of Zoological Nomenclature* and its purpose was, by bringing to light the bibliographical difficulties which had been encountered, to enlist the assistance of any interested specialist who might be in a position to give assistance. Mr. Hemming's note was as follows :—

On the question of the place and date of first publication of the name " Piroplasma annulatum " Dschunkowsky and Luhs (Class Sporozoa, Order Coccidiida) commonly treated as having been first published in 1904

By FRANCIS HEMMING, C.M.G., C.B.E.
(*Secretary to the International Commission on Zoological Nomenclature*)

Since it is a condition of publication in the *Bulletin of Zoological*

Nomenclature that a full bibliographical reference should be given in any paper containing an application submitted to the International Commission for decision, I attempted, when preparing Dr. Witenberg's application for publication, to identify the paper in which it was stated in that application Dschunkowsky and Luhs had in 1904 first published the name *Piroplasma annulatum* (Class Sporozoa, Order Coccidiida). When, however, I consulted the paper published by those authors in 1904 under the title " Die Piroplasmosen der Rinder " (1904, *Zbl. Bakt.* (Erste Abt.) 35 : 486—492, pls.), I found that, although that paper was a preliminary communication, it contained a full description of the new species, but that nowhere did it contain a scientific name for it. Accordingly in September 1944, I wrote both to Dr. Witenberg and to Dr. C. M. Wenyon, C.M.G., C.B.E., F.R.S., The Wellcome Foundation, London, asking for assistance in this matter.

Dr. Wenyon replied (6th September 1944) saying that he was examining the literature and would write as soon as his investigations were complete. On 11th October 1944, Dr. Wenyon reported as follows :—

We have made researches and have arrived at the following, which seems to be as far as we can go at present. It we get any more information, we will let you know.

We have been unable to trace the paper to which Dschunkowsky and Luhs' " Vorläufige Mitteilung " in the *Centralblatt*, 1904, was intended to be a preliminary. If it appeared at all, it is possible that it was in some obscure Russian journal. The earliest use we have discovered of the name *Piroplasma annulatum* (and there it is used as if it were already an accepted term) is in a paper read in the name of Dschunkowsky and Luhs by :—

> Tartakowsky [M. G.] (1906). [Remarks on Dschunkowsky and Luhs' observation on Piroplasmosis of Cattle in Trans-Caucasia.] *Report of the VIIIth International Veterinary Congress*, Budapest, 1905, Vol. III, p. 290.

The author appears as Herr Tartakowsky : we have taken his initials from the list of persons present (and on comparison with the rest, the " M " does not appear to stand for " Monsieur "). There is no title to his remarks ; he is third speaker in a discussion on " Les maladies tropicales des animaux domestiques " and " Le rôle des protozoaires dans les maladies des animaux," and starts with the words : "Als Beitrag zu den bis jetzt erstattelem Referaten sei mir gestattet, im Namen des Herrn Dschunkowsky . . . under seines Assistenten Herrn Luhs in kurzer Fassung einige Resultate ihrer Untersuchungen und Beobachtungen betreff der tropischen Rinderkrankheiten, welche in Transkaukasien verbreitet sind der Sektion mitzuteilen . . ."

Later, at the end of a list of names of diseases he gives :—" tropische Piroplasmose Dschunkowsky's und Luhs. Der Parasit : Piroplasma annulatum " [not in italics] . . . " Bemerkungswert ist, dass Piroplasma annulatum unter verschiedenen Umständen in drei Grundformen auftrifft :

1. die Hauptform, kleine ring-und birnenförmige Parasiten ;
2. lange und kleine bacillenartige Form ;
3. punkformige . . . P.-Sporen genannt.

In akuten Fällen beobachtet man die kleinen Ring- und Birnenformen im Sommer und P. Sporen im Winter. In dieser Hinsicht treten die Autoren von ihrer früheren Ansicht, dass die Punkform nur dem chronischen Verlauf der Krankheit eigen ist, zurück. In chronischen Fällen beobachtet man P.-Sporen im Winter und grosse bacillenartige Formen (3—5 μ) im Sommer . . ."

Immediately before Tartakowsky spoke, Herr Bitter (Cairo) concluded remarks he had made on Egyptian piroplasmosis with the words : " Es ist sehr wahrscheinlich, dass der Parasit identisch ist mit dem von Dschunkowsky und Luhs beschriebenen und ebenfalls auf dem Kongress demonstrierten Parasit."

Possibly Dschunkowsky and Luhs were present at the Congress and demonstrated their parasite though in the discussion Tartakowsky spoke for them.

In a further letter dated 18th October 1944, Dr. Wenyon stated :—

We have now seen and examined very carefully the 1st and 2nd volumes of the *Report of the 8th International Veterinary Congress*, Budapest, 1905 (published in 1906) and can find no mention of any paper by Dschunkowsky and Luhs and no account of the description and demonstration mentioned by Bitter in vol. III.

I add two new references, unfortunately to journals which, according to the *World List of Scientific Periodicals*, are not available in this country :—

1. Dzhunkovski, E. P. Tropical Piroplasmosis or African shore fever. Protk. zasid. *Kavkask. med. obsh.*, Tiflis, 1903-4, XL, 742.
2. Dzhunkovski, E., & Luhs, I. Piroplasmosis of cattle. *Vestnik obsch. vet.*, St. Petersb., 1903, XV, 769.

The second of the above papers is quoted twice by Laveran, A., (1906) in " Tropische Krankheiten der Haustieren ", *Rep. 8th Internat. Vet. Congr.*, Budapest, 1905, under the spelling " Dschunkowsky & Luhs " and the date " Sept. 1904 ".

On 25th October 1944 I received from Dr. Witenberg the following letter dated 15th October, 1944 :—

Referring to the publication in which *Piroplasma annulatum* was first proposed, I am sorry to say that I am not able to trace it. I corresponded with Dschunkowsky on this question but he was not able to help. I quote below a translation of a part of his letter of 13th July 1938, which contains hints in the matter :— ". . . . in the same year, (1903) I published, together with my collaborator, the late I. Luhs, a preliminary note in a small Russian journal, possibly ' *Veterinarnii Vratch.*'. In 1904 I reported on this species in the International Congress in Budapest . . . ."

On receipt of the above letter, I consulted Mr. D. A. E. Cabot, Chief Veterinary Officer, Ministry of Agriculture and Fisheries, London, who (in a letter dated 22nd November 1944) informed me that the Imperial Bureau of Animal Health had located copies of the journals containing the papers referred to by Dr. Wenyon in his letter of 18th October and were seeking to obtain microfilms of these papers, in order to ascertain whether the name *Piroplasma annulatum* has been published in either of them. These microfilms have not yet been obtained and, if any specialist reading the present note has access to either of these papers, it will be of great assistance to the Commission if, he will be so good as to furnish them with information on the above subject.

It will be seen from the foregoing particulars that it has not yet been possible to trace the original reference for the name *Piroplasma annulatum* or even to determine whether it was first published by Dschunkowsky alone or by that author jointly with Luhs. The fact that these questions have not yet been finally determined fortunately does not mean that there need be any delay in reaching a decision on

the problem submitted by Dr. Witenberg, since the question raised in Dr. Witenberg's application is one of principle and is not dependent upon the exact manner in which the name *Piroplasma annulatum* was first published.

5. Dr. Witenberg's application (paragraph 1 above) and Mr. Hemming's note on the subsequent bibliographical investigations (paragraph 4 above) were sent to the printer in September 1944 for publication in the *Bulletin of Zoological Nomenclature*.

6. In October 1944 the position was reviewed by Mr. Hemming and Dr. Wenyon who then came to the conclusion that it must be concluded that the name *Piroplasma annulatum* Dschunkowsky & Luhs was first published in 1906 in the Report of the VIIIth International Veterinary Congress held at Budapest in 1905—in the irregular manner described in the note by Mr. Hemming reproduced in the immediately preceding paragraph—unless that name was published in one or other of the following papers :—

(1) Dschunkowski, E. P. " Tropical Piroplasmosis or African shore fever." *Protk. zasid. Kavkask. med. obsch.*, Tiflis, 1903- 1904, vol. **40**, p. 742.

(2) Dschunkowski, E., & Luhs, I. " Piroplasmosis of cattle." *Vestnik obsch. vet.*, St. Petersb., 1903, vol. **15**, 769.

7. In the light of the foregoing conclusions, an approach was made in November 1944 to Mr. D. A. E. Cabot, M.R.C.V.S., *Chief Veterinary Officer, Ministry of Agriculture & Fisheries, London*, in the hope that it might be possible for him, with the help of the Imperial Bureau of Animal Health, to trace copies of the foregoing papers. Mr. Cabot at once undertook to assist to the full extent of his power but indicated that it might be some time before he was able to submit a definite report.

8. In January 1947 an attempt was made, on the suggestion of Dr. Wenyon, to obtain further light on the question of the original reference for the name *Piroplasma annulatum* Dschunkowsky & Luhs by addressing an enquiry on this subject to Professor E. N. Pavlovsky (*Institute of Experimental Medicine, Moscow, U.S.S.R.*),

but he was not immediately in a position to help in this matter. For Professor Pavlovsky's reply see paragraph 12 below.

9. On 14th January 1947 Mr. Cabot forwarded a photostat copy of the second of the two papers referred to in paragraph 6(2) above (namely the paper published at St. Petersburg in 1903 in the *Vestnik obsch. vet.*) which he had obtained with the assistance of the Director of the Imperial Bureau of Animal Health. An inspection of this paper showed that, although in it Dschunkowsky & Luhs had discussed the Piroplasmosis of Cattle, they did not then use the name *Piroplasma annulatum*. In view of the claims advanced on behalf of the foregoing paper as being the first in which the name *Piroplasma annulatum* was published and of the extreme rarity of this paper, it has been judged best permanently to dispose of this matter by reproducing this paper in facsimile.

10. As regards the other paper cited in paragraph 6(1) above, namely the paper by Dschunkowsky (not on this occasion in collaboration with Luhs) published at Tiflis in 1903 in the *Kavkask. med. obsch.*, Dr. Wenyon reported on 4th February 1947 as follows :—

> This name does not occur in the other paper that we have been trying to trace, namely, Dschunkowsky (not Dschunkowsky & Luhs), 1903, in *Kavkask. med. obsch.* Hoare [Wellcome Foundation] has a photostat copy of this.

11. Although, as explained in paragraph 5 above, Dr. Witenberg's application and Mr. Hemming's note were sent to the printer in September 1944, publication was greatly delayed owing to difficulties arising from paper rationing, shortage of labour at the printing works and similar causes, and it was not until 28th February 1947 that publication actually took place (Witenberg, 1947, *Bull. zool. Nomencl.* **1** : 233—234 ; Hemming, 1947, *ibid.* **1** : 234—236). The publication of these papers elicited no comments upon the question submitted by Dr. Witenberg and secured no additional information on the vexed question of the place of first publication of the name *Piroplasma annulatum* Dschunkowsky & Luhs.

№ 17. 1 сентября 1903 года. Годъ XV

ОРИГИНАЛЬНЫЯ И ПЕРЕВОДНЫЯ СТАТЬИ.

Пироплазмозы рогатого скота.

Предварительное сообщеніе [1]) *Е. Джунковскаго и И. Луса.*

(Изъ Зурзабатской противочумной станціи).

Пироплазмозы рогатого скота, извѣстные подъ различными названіями — техасской лихорадки, кровавой мочи, гемоглобинеміи, маляріи рогатого скота, родезійской лихорадки (R. Koch) и др. — авторы склонны считать болѣзнью, вызываемой паразитомъ одного и того же вида. Однако Lignières и въ самое послѣднее время R. Koch, Edington, Gray, Robertson, Pitchford и Theiler болѣе опредѣленно высказываются за различіе между пироплазмозами Южной Африки (напр., Rodesian fever) и техасской лихорадкой.

Пироплазмозы наблюдаемые въ Россіи, можно раздѣлить на три вида:

I. Пироплазмозъ сѣвера Россіи.

II. Пироплазмозъ Кавказа.

III. Пироплазмозъ Закавказья.

Послѣдній мы считаемъ особой формой, близко стоящей къ маларіи людей, и называемъ ее тропической формой пироплазмоза рогатаго скота, съ подраздѣленіемъ на острое заболѣваніе и кахексію.

Клинически пироплазмозъ, встрѣчающійся на сѣверѣ Россіи, въ огромномъ большинствѣ случаевъ сопровождается кровавой мочей, при отсутствіи рѣзко выраженной желтухи. При пироплазмозѣ, наблюдаемомъ на Переднемъ Кавказѣ, кровавая моча составляетъ тоже постоянный признакъ, при чемъ всегда различается окрашиваніе слизистыхъ оболочекъ въ различные оттѣнки желтаго цвѣта.

Тропическая форма пироплазмоза въ общемъ сводится къ слѣдующей картинѣ. Послѣ нѣсколькихъ залетовъ t° въ 40—41° С., слѣдующихъ другъ за другомъ черезъ промежутокъ въ 8—10 дней, лихорадка дѣлается постоянной, при чемъ t° достигаетъ 41—42° С. Замѣчается дрожаніе отдѣльныхъ группъ мышцъ. Иногда наступаютъ мозговыя явленія. Животныя дико вращаютъ глазами, бросаются на людей. Дыханіе обыкновенно ускорено до 30—35 разъ въ минуту. Пульсъ частый, до 120 въ минуту, едва ощутимый, нитевидный. Моча обыкновенно свѣтлая и только въ исключительныхъ случаяхъ окрашена въ желто-розовый цвѣтъ; часто наблюдаемая діаррея превращается иногда въ кровавой поносъ, наступаетъ параличъ сфинктеровъ. Въ другихъ случаяхъ наоборотъ бываютъ упорные запоры. Передъ смертью животное лежитъ, иногда съ искривленной на одну сторону шеей, и умираетъ при изнурительныхъ судорогахъ.

Длится болѣзнь отъ 4—8 дней. При кахектической формѣ t° достигаетъ 41° С.; затѣмъ, съ теченіемъ времени опускается до 39—39,7° С. и остается на такой высотѣ до смерти. Заболѣваніе характеризуется тоже интенсивной желтухой и постояннымъ исхуданіемъ. Количество красныхъ кровяныхъ шариковъ значительно падаетъ, доходя до 600 т. въ одномъ кубическомъ мм.

Патолого-анатомическія измѣненія при пироплазмозахъ, наблюдаемыхъ на сѣверѣ Россіи и Переднемъ Кавказѣ почти одинаковы. Они сводятся главнымъ образомъ къ увеличенію паренхиматозныхъ органовъ и отчасти къ появленію въ различныхъ органахъ экстравазатовъ. Разница заключается въ интенсивно выраженной желтухѣ при кавказской формѣ. Тропическая форма характеризуется обширными геморрагіями во всѣхъ органахъ. Онѣ встрѣчаются на слизистой оболочкѣ глазъ, губъ, языка, тканей бровяной, пищеварительнаго тракта, на серозныхъ оболочкахъ: плеврѣ, эпикардѣ, перикардѣ, брюшинѣ, въ кожѣ подкожной клѣтчаткѣ печени, легкихъ, селезенкѣ, мозгу желчномъ и мочевомъ пузырѣ. Особенное вниманіе обращаютъ на себя характерныя измѣненія въ сычугѣ и тонкихъ кишкахъ. Здѣсь очень часто наблюдаются язвы круглой формы съ темнымъ дномъ, окруженнымъ ярко-краснымъ ободкомъ. Со временемъ цвѣта язвы блѣднѣютъ получается желтоватое дно и темно-розовый ободокъ. Язвы образуются обыкновенно на мѣстѣ кровоизліяній крови, выходя подъ дѣленіемъ, принадлежитъ поверхностный слой слизистой оболочки — получается родъ бугорка темно-краснаго, а иногда чернаго цвѣта. Иногда язвочки находятся такъ близко другъ къ другу, что получается впечатлѣніе, будто бы слизистая оболочка усѣяна перцемъ.

Язвы изъ такихъ язвочекъ происходятъ путемъ постепеннаго отмиранія поверхности слоя надъ бугорками. При тропическихъ формахъ въ сычугѣ наблюдаются мѣста, занятыя поверхностнаго слоя слизистой оболочки въ видѣ небольшихъ полосъ желтоватаго цвѣта. Паренхиматозные органы увеличены. Печень глинистаго цвѣта, желчь оранжеваго цвѣта, капиллярная. Селезенка увеличена и пульпа ея расплывается. Почки, за исключеніемъ геморрагій въ капсулѣ и въ самой толщѣ, особыхъ измѣненій не представляютъ. Въ мочевомъ пузырѣ свѣтлая мутная моча. Въ подкожной клѣтчаткѣ, а также въ клѣтчаткѣ межмышечной, особенно въ области лопатки, замѣчается желтоватый студенистый инфильтратъ. Клѣтчатка вокругъ желчнаго пузыря и двѣнадцатиперстной кишки инфильтрирована такимъ же [illegible]. Въ трахеѣ и бронхахъ иногда бываетъ значительное количество кровянистой пѣнистой жидкости. Легкія иногда эмфизематозны.

Помимо описанной картины, бываютъ еще смѣшанныя формы, наблюдаемыя особенно у скота, приведеннаго изъ Закавказья изъ разныхъ мѣстъ Передняго Кавказа.

Обращаясь къ дифференціальному діагнозу, мы должны отмѣтить сходство разныхъ формъ пироплазмозовъ съ сибирской язвой и чумой рогатаго скота [2]).

Пироплазмозъ сѣвера характеризуется типичными грушками piroplasma bigeminum; близкимъ къ нему видомъ обусловливаются и заболѣванія, наблюдаемыя на Переднемъ Кавказѣ, съ той только разницей, что здѣсь пироплазмы нѣсколько большей величины. При тропическомъ пироплазмозѣ паразиты встрѣчаются въ трехъ видахъ:

1) въ видѣ бациллъ,

2) въ видѣ кольцевидныхъ паразитовъ,

3) въ видѣ точекъ.

Острая форма обусловливается бациллами и кольцевидными паразитами, а кахексія точечными. Бациллы, достигающія въ длину 3—4 μ., состоятъ изъ чистаго хроматина, напоминаютъ по формѣ выпрямленныя запятыя и подвижны. Кольцевидные паразиты представляются или строго круглой, или нѣсколько овальной формы, въ родѣ небольшой грушки. Хроматинъ здѣсь распредѣляется на одномъ и рѣдко на двухъ полюсахъ въ видѣ круглыхъ или нѣсколько овальныхъ точекъ или въ видѣ болѣе обширнаго утолщенія конаруса. Эта форма также обладаетъ

[1]) Благодаря совершенно непредвидѣннымъ обстоятельствамъ, мы вынуждены поспѣшить печатаніемъ настоящаго предварительнаго сообщенія, не ожидая выясненія нѣкоторыхъ важныхъ сторонъ изучаемаго нами вопроса о пироплазмозахъ рогатаго скота.

[2]) Въ Баку на бойнѣ постоянно происходили недоразумѣнія, при чемъ ветеринары, вѣдущіе осмотръ мяса, утверждали, что на рынокъ доставляется чумный скотъ. Только послѣ командировки одного изъ городскихъ ветеринаровъ, магистра С. Гребнера въ Зурзабатскую противочумную станцію, гдѣ ему были указаны основы для распознаванія пироплазмозовъ и продемонстрированы напр. и макроскопическіе препараты, эти ошибки въ діагнозѣ прекратились. Такое же смѣшеніе съ чумой тропической формы пироплазмоза имѣло мѣсто и въ Дагестанѣ.

Facsimile of the first portion of the paper by Dschunkowsky & Luhs on "Piroplasmosis of Cattle" published in 1903 in *Vestnik obsch. vet.*, St. Petersb., vol. 15, Columns 769—770.

усиленными амебоидными движеніями. Мы полагаемъ, что кольцевидная форма происходитъ изъ бациллярной, при чемъ дѣло происходитъ такъ. Бацилла, бывающая вначалѣ одинаковой толщины по своей оси, становится посрединѣ тоньше; хроматинъ стягивается къ полюсамъ—получаются какъ бы двѣ бациллы (Hantelform людской маляріи). Обѣ соединенныя бациллы могутъ располагаться, благодаря постоянному движенію, подъ различными углами. Черезъ нѣкоторое время бациллы отходятъ другъ отъ друга. Теперь хроматинъ начинаетъ стягиваться, главнымъ образомъ, къ одному тупому концу, при чемъ посрединѣ паразита начинается выдѣленіе протоплазмы. Паразитъ сохраняетъ, по прежнему, форму выпрямленной запятой; скопленіе хроматина находится на утолщенномъ полюсѣ и въ видѣ тоненькой каемки по окружности, а самая протоплазма располагается внутри.

Отношеніе діаметровъ паразита въ это время равно 3 : 1. Далѣе, бациллы стягиваются по направленію длинной оси и расширяются: острый конецъ такимъ образомъ сглаживается. Получается видъ совершенно правильнаго кольца или слегка овальной грушки, съ скопленіемъ хроматина на одномъ и рѣже на двухъ полюсахъ въ видѣ точекъ, при чемъ онѣ прилегаютъ или къ внутренней сторонѣ ободка или лежатъ на самомъ ободкѣ, такъ что половина точки выступаетъ надъ нимъ (Siegelringform людской маляріи). Одна изъ точекъ хроматина бываетъ раза въ три больше, чѣмъ другія. При кахексіи паразиты бываютъ почти всегда въ видѣ точекъ круглой или слегка овальной формы, состоящихъ изъ одного плотнаго хроматина. Онѣ неподвижны; это болѣе стойкія формы. Количество паразитовъ въ крови бываетъ различно. Въ острыхъ случаяхъ поражены почти всѣ шарики (95—96%) и въ каждомъ находятся отъ 2 до 8 паразитовъ. При кахексіи поражены отъ 25—50% шариковъ и въ каждомъ отъ 1—3 паразитовъ. Зараженные шарики не увеличиваются и не теряютъ красящаго вещества; въ нихъ также не замѣтно скопленій этого вещества въ видѣ точекъ (Tüpfelung).

Если разсматривать паразитовъ въ висячей каплѣ крови на нагрѣвательномъ столикѣ, то мы замѣтимъ, что они, совершая амебоидныя движенія, выходятъ изъ шариковъ въ плазму и здѣсь быстро движутся, вращаясь въ то же время по оси или изгибаясь то въ одну, то въ другую сторону. Черезъ нѣсколько часовъ правильные контуры паразита постепенно измѣняются; протоплазма принимаетъ при этомъ самую разнообразную форму; иногда она замѣтна въ видѣ не ясно выраженной бахромки, отъ которой со временемъ остается только желтая каемка, съ трудомъ окрашивающаяся въ синій цвѣтъ. Бахромка распредѣляется обыкновенно по одну сторону хроматина, а самый хроматинъ стягивается въ кругловатый комокъ. Черезъ 10—15 дней хроматинъ начинаетъ дѣлиться на двѣ части, но, вѣроятно, можетъ распадаться и сразу на нѣсколько мелкихъ, зернистыхъ, угловатой формы, величиной въ небольшіе кокки. Далѣе, мелкія зернышки нѣсколько увеличиваются и снова дѣлятся. Такимъ образомъ получается родъ культуры. Жидкость въ пробиркѣ обыкновенно совершенно прозрачна, а на днѣ собирается немного осадка сѣроватаго цвѣта. Для равномѣрнаго распредѣленія осадка въ жидкости пробирку необходимо долго и сильно встряхивать. Такой ростъ паразитовъ получается на сывороткѣ больныхъ животныхъ съ примѣсью гемоглобина. Ростъ при дальнѣйшихъ пересѣвахъ наблюдается только черезъ 10—15 дней.

Окраска производится успѣшнѣе всего по Giemsa; по Reiter'y паразиты тропической формы не окрашиваются совершенно, тогда какъ паразиты другихъ пироплазмозовъ окрашиваются очень хорошо. Такимъ образомъ, окрашивая по Reiter'y, можно легко дифференцировать различныхъ паразитовъ пироплазмозовъ. Окраска по Giemsa даетъ такую картину: бациллы въ молодой стадіи окрашиваются въ блестяще карминово-красный цвѣтъ. При постепенномъ дѣленіи бациллъ, протоплазма ихъ окрашивается въ блѣдно-синеватый цвѣтъ. Въ кольцевидныхъ паразитахъ и маленькихъ грушкахъ хроматинъ представляется отъ карминово-краснаго до красно-фіолетоваго цвѣта, а протоплазма блѣдно-синеватаго, при чемъ самый контуръ кажется розоватаго или синеватаго цвѣта. Въ общемъ паразитъ напоминаетъ форму кольца. Ахроматической зоны мы не замѣчали. Точечные паразиты при кахексіи окрашиваются очень рѣзко въ ярко-красный и малиновый цвѣтъ. Въ культурахъ паразитъ, состоя изъ болѣе рыхлаго хроматина, окрашивается не такъ быстро и менѣе ярко, при чемъ по краямъ отдѣльныхъ зернышекъ наблюдается иногда оттѣнокъ розоватаго или голубоватаго цвѣта.

Зараженіе здоровыхъ животныхъ кровью, содержащей паразитовъ, намъ ни разу не удалось, несмотря на многочисленные опыты введенія вирулентнаго матеріала подъ кожу, въ вены и въ брюшную полость. Иногда кровь вводилась въ количествѣ нѣсколькихъ литровъ. Опыты впрыскиванія крови козамъ, кроликамъ, морскимъ свинкамъ, мышамъ и голубямъ дали отрицательные результаты. Мы наблюдали далѣе, что нормальныя на видъ животныя имѣютъ въ крови незначительныя количества паразитовъ бациллярной и кольцевидной формы; если такихъ животныхъ подвергнуть зараженію чумой рогатаго скота, то они заболѣваютъ одновременно чумой и пироплазмозомъ. Съ этимъ явленіемъ приходится, между прочимъ, считаться при примѣненіи комбинаціоннаго метода противочумныхъ прививокъ въ Закавказьѣ, особенно въ низменныхъ мѣстахъ, пораженныхъ пироплазмозами. Кромѣ того, на станціи наблюдались случаи, когда послѣ значительнаго кровопусканія у высоко-иммунныхъ животныхъ слѣдовало повышеніе температуры и развивалась тропическая форма пироплазмоза со смертельнымъ исходомъ. Мы думаемъ, что у животныхъ, носящихъ уже въ крови заразу, всѣ причины, выводящія организмъ изъ обычнаго равновѣсія, вызываютъ обостреніе болѣзни.

Опыты полученія лѣчебной сыворотки посредствомъ иммунизаціи рогатаго скота большими количествами вирулентной крови не удались. Сыворотка не оказывала никакого вліянія на теченіе болѣзни. Результаты опытовъ предохраненія животныхъ сывороткой, вирулентной кровью и культурами будутъ опубликованы позже. Что касается роли ixodes при тропической формѣ, то мы ограничимся пока указаніемъ, что впрыскиваніе здоровымъ животнымъ эмульсіи изъ клещей и личинокъ, бывшихъ на больныхъ, заболѣванія не вызываетъ. Наконецъ, мы имѣли возможность убѣдиться, что на горныхъ пастбищахъ, расположенныхъ на высотѣ пяти тысячъ футъ и болѣе, гдѣ не наблюдается пироплазмоза, не встрѣчаются и ixodes.

Примѣненіе мальеина въ с.-петербургскомъ земствѣ за 1-ую половину 1903 года

(по даннымъ ветеринарнаго отдѣленія с.-петерб. губ. земства).

Изслѣдованіе лошадей «подозрѣваемыхъ въ зараженіи сапомъ» до прошлаго года не производилось, и такія лошади оставлялись подъ ветеринар. наблюденіемъ впредь до проявленія у нихъ признаковъ, дающихъ возможность считать ихъ больными сапомъ и, какъ таковыя, тогда онѣ и уничтожались. Но, какъ извѣстно, такія лошади, переходя въ разрядъ «подозрительныхъ по заболѣванію», только лишь черезъ болѣе или менѣе продолжительное время, въ теченіе котораго онѣ легко могутъ служить источникомъ зараженія для окружающихъ и еще совершенно здоровыхъ лошадей, оставленіе же ихъ для болѣе точнаго изслѣдованія бактеріологическимъ путемъ сопряжено съ потерей значительнаго времени, а слѣдовательно и

Facsimile of the concluding portion of the paper by Dschunkowsky & Luhs on "Piroplasmosis of Cattle" published in 1903 in *Vestnik obsch. vet.*, St. Petersb., vol. 15, Columns 771—772.

12. On 13th April 1948 Miss I. M. Bellis, on behalf of Dr. Wenyon, forwarded the following extract from a letter dated 12th June 1947 addressed to Dr. C. A. Hoare (*The Wellcome Foundation*) by Professor E. N. Pavlovsky (see paragraph 8 above) :—

With regard to Dschunkowski, I have copied everything that was published. As to whether the new name (*Piroplasma annulatum*) was given according to the rules—it was not. They [Dschunkowski & Luhs] simply named it and that is all. I think that he [Dchunkowsky] was in Yugoslavia.

III.—THE DECISION OF THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

13. The present application was considered by the International Commission on Zoological Nomenclature at the Fourteenth Meeting of its Paris Session held at the Sorbonne in the Amphithéâtre Louis-Liard on Monday, 26th July 1948 at 2030 hours. The following is an extract from the Official Record of the Proceedings of the International Commission, setting out the decision which, subject to the condition specified in Point (6) of the Official Record (quoted below), the Commission reached in regard to this case at the meeting referred to above (Paris Session, 14th Meeting, Conclusion 5) (1950, *Bull. zool. Nomencl.* **4** : 431—433) :—

THE COMMISSION agreed :—

(1) that, pending the outcome of the further investigation referred to in (5) below, the name *Piroplasma annulatum* (Class Sporozoa, Order Coccidiida) should, on the information at present available, be treated as having been first published in 1906 in the *Report of the VIIIth International Veterinary Congress, Budapest*, 1905 : 290, where it appeared in a paper by Dschunkowsky & Luhs

communicated to the Congress by M. G. Tartarowsky, and that this name should therefore be attributed to Dschunkowsky & Luhs, [1906] ;

(2) that Dr. E. Sergent was in error when in 1923 he rejected the trivial name *annulatum* Dschunkowsky & Luhs on the ground that, when that name had been first published, it had been applied to a composite species (the one pathogenic, the other non-pathogenic), for under the *Règles* a trivial name cannot be rejected on this ground, it being necessary to determine the species to which the name should be applied by the means provided by Article 31 ;

(3) that Dr. Witenberg himself in his application to the Commission (1947) applied the provisions of Article 31 to the trivial name *annulatum* Dschunkowsky & Luhs, 1905, when he selected as the species to which that name should apply the pathogenic (as contrasted with the non-pathogenic) species included by Dschunkowsky & Luhs in the nominal species *Piroplasma annulatum* when they first published the name of that composite species, and therefore that the trivial names *parva* and *dispar*, as published by Sergent (1923) (in combination with the generic name *Theileria*) were objective synonyms of the trivial name *annulatum* Dschunkowsky & Luhs (as published in 1906 in combination with the generic name *Piroplasma*) ;

(4) to place on record their thanks to Dr. C. M. Wenyon (*Wellcome Foundation, London*) and Mr. D. A. E. Cabot, Chief Veterinary Officer, United Kingdom Ministry of Agriculture and Fisheries, for their assiduous efforts to assist in the investigation of the complex bibliographical problems involved in this case ;

(5) to invite the Secretary of the Commission to examine, in consultation with specialists, the question whether there was any prospect of obtaining more precise information regarding the date on which, and the place in which, the name *Piroplasma annulatum* was first published ;

(6) to render an *Opinion* recording the decisions specified in (1) to (3) above, as soon as the Secretary had either

brought to a successful issue the inquiry referred to in (5) above or was satisfied that no further information regarding the date and place of first publication of the name *Piroplasma annulatum* was likely to be obtained.

14. The publication on 9th June 1950 of the Part (Triple Part 13/15) of volume 4 of the *Bulletin of Zoological Nomenclature* containing the Official Record of the decision reached by the Commission at Paris in this case elicited no further information bearing upon the question of the date and place of first publication of the name *Piroplasma annulatum* Dschunkowsky & Luhs. The position was further reviewed in the autumn of 1951 by Mr. Hemming, as Secretary to the Commission, in the light of the duty imposed upon him by the Commission at its Paris Session (Point (5) in the decision quoted in paragraph 13 above). Mr. Hemming then decided to make one further effort to obtain information on the foregoing subject by publishing a short Report on this case, together with an appeal to specialists to furnish any additional information which they might possess. Mr. Hemming's Report, which was as follows, was published on 15th April 1952 (Hemming, 1952, *Bull. zool. Nomencl.* **7** : 206—207) :—

Case 14 : Species to which the trivial name " annulatum " commonly treated as having been published by Dschunkowsky & Luhs in 1904 (in the combination " Piroplasma annulatum ") (Class Sporozoa, Order Coccidiida) is to be treated as applicable

By FRANCIS HEMMING, C.M.G., C.B.E.
(*Secretary to the International Commission on Zoological Nomenclature*)

(See 1950, *Bull. zool. Nomencl.* **4** : 431—433)

32. The question of the species of the Order Coccidiida (Class Sporozoa) to which is applicable the trivial name *annulatum* commonly treated as having been published by Dschunkowsky and Luhs in 1904 in the combination *Piroplasma annulatum* was submitted to the International Commission on Zoological Nomenclature by Dr. G. Witenberg (*Hebrew University, Jerusalem*) in an application which was

published in the *Bulletin of Zoological Nomenclature* in 1947 (Witenberg, 1947, *Bull. zool. Nomencl.* **1** : 223—224). In the course of preparing this application for submission to the Commission, in my capacity as Secretary to the Commission, I established that the name *Piroplasma annulatum* was not published in the paper by Dschunkowsky & Luhs which appeared in 1904 and which was always cited in the literature as the place where this name was first published. In spite of extensive correspondence with specialists on the subject, I was not able definitely to establish when and where this name was first published with an indication, though I did form an opinion as to the place where it probably first appeared. The foregoing investigations formed the subject of my Report which was published at the same time as Dr. Witenberg's application (Hemming, 1947, *Bull. zool. Nomencl.* **1** : 234—236).

33. Dr. Witenberg's application and my Report were considered by the International Commission on Zoological Nomenclature at its Session held in Paris in 1948 ; the Commission then took a decision on the question submitted by Dr. Witenberg, but decided to postpone for a short time rendering an *Opinion* on this subject, in the hope that further efforts might elicit information throwing light on the question of the place where the name *Piroplasma annulatum* was first published and the date on which it was first published. The publication in 1950 of the foregoing decision has not, however, brought any fresh information to light on this subject. Clearly the formal promulgation of the Commission's decision on the question submitted by Dr. Witenberg cannot be allowed much longer to be held for the sake of investigations as to the date and place of first publication of the foregoing name. In order, however, to exhaust every possible means of obtaining information on this subject, this case is included in the present Report in the hope that there may be some protozoologist or other zoologist or some veterinary specialist who may be able to throw some additional light on this question.

15. On 11th October 1953, Mr. Hemming, as Secretary to the International Commission, prepared the following Report in discharge of the duty imposed upon him by the International Commission at its Session held in Paris in 1948 under Point (5) of the decision then taken by it in the present case :—

Decision taken conditionally by the International Commission on Zoological Nomenclature at its Session held in Paris in 1948 in the case of the name " Piroplasma annulatum " Dschunkowsky & Luhs

REPORT by FRANCIS HEMMING, C.M.G., C.B.E.
Secretary to the International Commission

In Paris in 1948 the International Commission on Zoological Nomenclature took certain decisions (1950, *Bull. zool. Nomencl.*

4 : 432—433) in regard to the name *Piroplasma annulatum* commonly (though incorrectly) treated as having been published in 1904 in a paper by Dschunkowsky & Luhs entitled " Die Piroplasmosen der Rinder " (1904, *Zbl. Bakt.* (Erste Abt.) **35** : 486—492) and agreed to render an *Opinion* embodying the decisions so taken.

2. One of the problems considered by the International Commission in connection with the present case was the determination of the date and place of first publication of the name *Piroplasma annulatum*. On this subject the Commission agreed that on the available evidence the foregoing name must be regarded as having been first published in 1906 in the Report of the VIIIth International Veterinary Congress, Budapest, 1905 (**3** : 290), but (Point (5)) invited me, as Secretary to the Commission, " to examine in consultation with specialists, the question whether there was any prospect of obtaining more precise information regarding the date on which, and the place in which, the name *Piroplasma annulatum* was first published ". At the same time the International Commission agreed (Point (6)) to render an *Opinion* embodying the decisions then taken in regard to this name, " as soon as the Secretary had either brought to a successful issue the enquiry referred to in (5) above or was satisfied that no further information regarding the date and place of first publication of the name *Piroplasma annulatum* was likely to be obtained ".

3. In view of the prolonged investigations into the foregoing question carried out before the Paris Session of the International Commission by Dr. Wenyon, Dr. Witenberg, and Mr. Cabot, and the negative evidence furnished by Professor Dschunkowsky (in correspondence with Dr. Witenberg) and by Professor Pavlovsky (in correspondence with Dr. Hoare), it was evident at that Session that it was most unlikely that it would be possible to secure more precise information regarding the date on which, and the place in which, the name *Piroplasma annulatum* was first published, than was already available to the International Commission. Since that date, the foregoing problem has twice been ventilated in print : first, in June 1950 when the Official Record of the Proceedings of the Commission in Paris were published in volume 4 of the *Bulletin of Zoological Nomenclature* ; second, in April 1952 on the publication of my Report, with its accompanying appeal to specialists, in volume 7 of the *Bulletin*. On each occasion the result has been completely negative, no information of any kind bearing upon the date and place of first publication of the name *Piroplasma annulatum* having been elicited. In the concluding stages of this investigation, the most valuable assistance has been rendered by Dr. C. A. Hoare, F.R.S. (*The Wellcome Laboratories of Tropical Medicine, London*) and by Miss I. M. Bellis of the same Institution, who, though unable to throw any additional light on the central issue, have solved a number of other bibliographical problems on which information was required in this case. The thanks

of the Commission are offered to both these specialists for the help so rendered.

4. At this stage, however, it is necessary to note an inadvertent error in the Point (3) of the preliminary decision taken by the Commission in Paris in this matter, where it was stated that the species *Theileria parva* Sergent (Ed.) and *Theileria dispar* Sergent (Ed.), 1923, were objectively identical with *Piroplasma annulatum* Dschunkowsky & Luhs, [1906], and therefore that the specific names (there referred to, under the then correct term, trivial names) *parva* Sergent (Ed.), 1923, and *dispar* Sergent (Ed.), 1923, as published in each case in combination with the generic name *Theileria* were junior objective synonyms of *annulatum* Dschunkowsky & Luhs, [1906], as published in the combination *Piroplasma annulatum*. This statement, which was based upon a misreading of the brief application originally submitted in this case, is incorrect, for the nominal species *Theileria parva* (for which *Theileria dispar* is no more than a substitute with a different name) and *Piroplasma annulatum* were not based upon the same material and are therefore only subjectively the same as one another, and their names are subjective, and not objective, synonyms of one another. Moreover, the name *Theileria parva* was published not by Sergent (Ed.) but by Donatien (A.), Plantureux (E.), Rossi (P.), & Espérandieu (G.). Finally, the name *Theileria dispar* Sergent (Ed.) was published in 1924 and not in 1923. The necessary corrections will need to be made in the Ruling to be given in the present case.

5. In view of the circumstances described in paragraph 3 of the present Minute, I now, as Secretary to the International Commission on Zoological Nomenclature, hereby formally discharge the duty imposed upon me under Point (5) of the decision taken by the International Commission at its Session held in Paris in 1948 by reporting that I am satisfied that no further information regarding the date and place of first publication of the name *Piroplasma annulatum* is likely to be obtainable.

SIGNED this Eleventh day of October, Nineteen Hundred and Fifty-Three.

Secretary to the International Commission on Zoological Nomenclature

FRANCIS HEMMING

16. The signature of the Minute by the Secretary reproduced in the immediately preceding paragraph completed the action called for from that Officer under Point (5) of the decision taken by the Commission in Paris in 1948. Thereupon, under Point (6) of

the said decision, definitive effect was automatically given to the decision by the Commission to render an *Opinion* embodying the matters specified in Points (1) to (3) of the Ruling agreed upon in Paris, as quoted in paragraph 13 of the present *Opinion*, subject to the inclusion therein of the corrections on certain points of detail noted in paragraph 4 of the Secretary's Report of 11th October 1953 (paragraph 15 above).

17. Under the regulations relating to the *Official List of Specific Names in Zoology* and the *Official Index of Rejected and Invalid Specific Names of the Zoology*, the International Commission is required to place on the foregoing *Official List* every specific name which it either validates under its Plenary Powers or declares to be an available name, and on the foregoing *Official Index* every specific name which it either rejects under its Plenary Powers or declares to be invalid. In the present instance, the entry on the *Official List of Specific Names in Zoology* of the specific name *annulatum* Dschunkowsky & Luhs, [1906], as published in the combination *Piroplasma annulatum*, was inadvertently omitted from the Official Record of the Proceedings of the International Commission. This omission has been rectified in the Ruling given in the present *Opinion*.

18. The following are the original references for the names which appear in the decision set out in paragraph 13 of the present *Opinion* :—

annulatum, *Piroplasma*, Dschunkowsky & Luhs, [1906], *Rep. VIIIth int. vet. Congr.*, Budapest, 1905, **3** : 290

dispar, *Theileria*, Sergent (E.) *et al.*, 1924, *Ann. Inst. Pasteur* **38** : 297

parva, *Theileria*, Sergent (E.), 1923, Donatien, Plantureux *et al.*, 1923, *Bull. Soc. Path. exot.* **16** : 7

19. The decision taken in the present case was reported to, and approved by, the Section on Nomenclature of the Thirteenth International Congress of Zoology, Paris, 1948, at its Sixth Meeting held on Monday, 26th July 1948 (1950, *Bull. zool. Nomencl.* **5** : 112).

20. The Ruling given in the present *Opinion* was concurred in by the sixteen (16) Commissioners and Alternate Commissioners present at the Paris Session of the International Commission, namely :—

Beltrán *vice* Cabrera ; Boschma ; Bradley ; di Caporiacco ; Hemming ; Hindle *vice* Jordan ; Jorge *vice* do Amaral ; Kirby *vice* Stoll ; Lemche *vice* Dymond ; Mansour *vice* Hankó ; Metcalf *vice* Peters ; Riley *vice* Calman ; Rode ; Spärck *vice* Mortensen ; van Straelen *vice* Richter ; Usinger *vice* Vokes.

21. The Ruling given in the present *Opinion* was dissented from by no Commissioner or alternate Commissioner present at the Paris Session.

22. At the time of the adoption of the Ruling given in the present *Opinion*, the expression prescribed for the second portion of the binomen which constitutes the scientific name of a species was the expression " trivial name " and the *Official List* reserved for recording such names was styled the *Official List of Specific Trivial Names in Zoology*, the word " trivial " appearing also in the title of the Official Index reserved for recording rejected and invalid names of this category. Under a decision taken by the fourteenth International Congress of Zoology, Copenhagen, 1953, the expression " specific name " was substituted for the expression " trivial name " and corresponding changes were made in the titles of the *Official List* and *Official Index* of such names (1953, *Copenhagen Decisions zool. Nomencl.* : 21). The changes in terminology so adopted have been incorporated in the Ruling given in the present *Opinion*.

23. The prescribed procedures were duly complied with by the International Commission on Zoological Nomenclature in dealing with the present case, and the present *Opinion* is accordingly hereby rendered in the name of the said International Commission by the under-signed Francis Hemming, Secretary to the International Commission on Zoological Nomenclature, in virtue of all and every the powers conferred upon him in that behalf.